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XXI.—*Sketch of the Country between Jervis Inlet and Port Pemberton, on the Lilloet River, a Branch of the Fraser River, British Columbia; with a Map.* By Lieut. RICHARD C. MAYNE, R.N., of H.M.S. *Plumper*.

Communicated by the LORDS COMMISSIONERS OF THE ADMIRALTY.

Read, June 10, 1861.

TO CAPTAIN GEORGE H. RICHARDS, R.N., H.M.S. *Plumper*.

H.M.S. *Plumper*, Esquimalt, Vancouver Island,
July 23rd, 1860.

SIR,

I have the honour to report, that, in compliance with your orders, I left the ship on the 3rd instant with a party of five Indians, and accompanied by Dr. Wood, M.D., to endeavour to penetrate the valley running northward from the head of Jervis Inlet, or at least to ascertain if that valley could be used as a road to the gold-fields of British Columbia. Only landing in the afternoon, we got but a few miles that night, and camped about 5 miles from the beach, the way so far having been through dense woods, with thick undergrowth of raspberry, &c. Next morning, after proceeding about a mile, we came to the Lā-ā-kīne River. Immediately we reached this stream the Indians said we should not be able to get on, as from the depth of the water in it there they knew we could not cross it higher up; and even if we succeeded in crossing this stream, the Sqāwmisht and Lilloet rivers would be over our heads, as when there is little or no water in the Lā-ā-kīne these and three other rivers which we should have to cross are waist-deep at the fords. We thought, however, that they might be exaggerating, and pushed on. We crossed the stream with great difficulty, owing to its depth and velocity, three times, and struggled on till four o'clock, when we came to a place where the Indians said we must again cross if we wished to go on. The only means of crossing here was by a single log, 2 feet under water, over which the stream, about 400 yards wide, was rushing in a torrent; and after an effort I gave up the idea of getting along it. We then felled the only tree near which could at all answer our purpose, but with no success; and I decided on relinquishing the attempt to get further, and camping here for the night to retrace our steps in the morning. There is no doubt that had we remained there we should ultimately have been able to cross, though it might not have been for weeks; or by forcing our way higher up, and felling a number of trees, we might have bridged the stream; but this did not appear to me to be your wish or the object of the expedition. You particularly pointed out in my written instructions the futility of proceeding unless the route was such as to be available as a way to the interior, and I was quite convinced that this valley could never be turned to account as such. The Indians never, I find, go this way in summer, but only in winter, when the snow is on the ground, and the bed of the Lā-ā-kīne is dry or nearly so, and the Squāwmisht and Lilloet are much lower. They were very urgent from our first coming on the stream that we should not proceed, and, though not sulky or refusing to go, every time we stopped they endeavoured to impress on me the impossibility of reaching the Fraser.

In making a road the difficulty of crossing the rivers would of course be overcome by bridging, but there is really no ground on which to lay a road, unless by blasting it out of the perpendicular mountain-side, for the valley is completely covered by the water when the river is at its highest. The bed is of sand and shingle, and the semblance of a bank which now exists is a swamp in which a mule would sink to his girths. From our coming on the

river in the morning till we camped, eight hours, we were either wading in the water up to our hips, or struggling through the willow, alder, and raspberry bushes on the swampy bank. I therefore most reluctantly determined to return to Jervis Inlet without further waste of time or provisions, and endeavour to penetrate from it to Howe Sound, and from that to Lillooet, and ascertain the feasibility or otherwise of these routes. Accordingly we left in the morning (5th), and reaching our first camping-place that night, arrived at the inlet at nine on the following day.

Having got to the inlet the Indians were very reluctant to start again, but at length did so; and, stopping at their village in the eastern arm that night, proceeded next morning to Deserted Bay, and started from thence for Howe Sound at two on the same afternoon (7th). We went only 5 or 6 miles that day, and camped on the east bank of the Tzōōm̄yē, a small river which rises, the Indians say, in a lake not far north of this, and runs southerly into Jervis Inlet, near where we started. Directly facing us was the ridge we had to cross next day, and which, had we then known its elevation and difficulty of ascent, would probably have turned us back at once, as alone rendering this pass unavailable.

The next morning (8th) we started up this ascent, and after 12 hours' laborious climbing, we camped on the only spot we could find clear of the snow, more than 4000 feet above our last night's camp. As I said above, this barrier would effectually stop the transmission of baggage this way were all the rest clear; for not only is the elevation so great that at this season we passed over several miles of snow, but the ascent is very steep (about 36°), and we found that, though more gradual, the descent on the other side was infinitely worse travelling than the ascent, and that each day it became worse.

It is useless to detail each day's journey; it is enough to say that we descended by a valley through which runs a river which is nameless, on the east side of the watershed, though called the Quālāwhām on the west side. This river takes its rise under the snow, near the spot where we made our camp, and runs westward into the Trōōn̄yē, at the foot of the mountain, and eastward to the Squāwm̄isht, which it joins about 20 miles above Howe Sound. Our path, if such it may be called, lay either up very steep ascents or down equally steep descents, through thick jungle similar to that on the Lā-ā-kine, and over large irregular boulders of granite and trap, with occasionally, though very seldom, a piece of pretty level copse, there being sufficient rain, swamp, and fording of streams, to keep us wet through all the time.

We reached the village, where we were to get canoes to cross the Squāwm̄isht River, on the morning of the 12th; and here Dr. Wood determined to leave, he being so much fatigued with the exertions of the last week as to be unable to proceed; and having procured a canoe, he started for New Westminster that afternoon. The village mentioned is a very small one, containing about fifty people. It is situated on the west side of a valley which extends to the head of Howe Sound, down the east side of which valley flows the Tsēē-ārk-āmisht River, joining the Squāwm̄isht lower down. This valley does not contain any great extent of clear land.

I here append the remarks given me by Dr. Wood, made on his way down the valley. "Leaving the Indian village where we struck the Squāwm̄isht, about 2 P.M., we descended the river at a rapid rate, the current running from 6 to 7 knots an hour, according to the width of the channel. It rained incessantly, and, without compass, I could not observe the direction of the channel generally, which is southerly, without any great bend. Some 12 or 15 miles from the spot whence we started the Tsēē-ārk-āmisht River joins the Squāwm̄isht on the port-hand (descending), and here the Indians told me Mr. M'Kay came out. A further distance of 8 or 10 miles brought us to the

head of Howe Sound. I suppose the distance from the Indian village to the head of Howe Sound to be 25 or 30 miles, it occupied us about two hours and a half. The Squāwmisht River averages a width of 50 yards in its course downwards; delta are frequent; and numerous streams are seen diverging by islets formed by river-deposits and consequent settlement by vegetation; sand-bars are frequently passed, tenanted by Indians engaged in fishing; and, as the river widens, rich plateaus of land are seen on either side occupied by Indian villages and potato-fields. The river has apparently some depth, the chief assuring me that steamers could ascend to the village we left, much better than to Port Douglas. The water is derived from the snow; and I should consequently suppose decreasing during the summer, and towards autumn leaving an almost dry river-bed. I slept one night on the port-hand of Howe Sound (descending), and reached Port Woody, at the head of Burrard Inlet, next day about half-past 6. Hauling the canoe up, I started by trail for New Westminster, reaching Esquimalt next day by steamer" (14th July).

I left the village at the same time as Dr. Wood, and with my party in two canoes proceeded up the Squāwmisht River. It took us nearly two hours to get about 4 miles, the river being full of rapids, eddies, and sandbanks, so that we had to cross and recross several times. Its average width was 100 yards, and direction north-east. We landed on the left bank at half-past 3, having gone about 4 miles by water, and shortly afterwards camped.

On the following morning I commenced the ascent, which would form the principal difficulty to making a road by this route, and reached the summit shortly after noon, the aneroid giving an elevation of 2000 feet above our starting-place. By the way we went, about 400 feet of this ascent would be rather steep for a road; but I feel confident, from the general appearance, a more easy grade could be found without difficulty. From this to Port Pemberton was a gradual descent, and though there were some hills to cross, and a great deal of thick bush and rough walking, we met nothing that would form a serious impediment to an engineer.

After passing the summit, our way lay along a gorge by the side of a stream till we came to an abrupt hill, crossing which brought us to a small lake, called, I believe, Daisy Lake, and here we halted for the night. Starting next morning we crossed another hill and immediately came upon the Tsēe-ārk-āmisht River, which is here 40 or 50 yards wide, running through a large basin, which appears as if it had been lately inundated; indeed, had it not been for the dead trees still standing, I should have taken it for the bed of a lake from which the water had recently receded. We had no difficulty in crossing the river on the dead wood which completely blocks it up at this point, and we then continued along the basin over sand and boulders of granite and trap, about 2 miles, when we came to that part where the river is still over its banks, as described by Mr. McKay in his published letter. From this point we followed up the route by which he came down, but from this to Howe Sound he went down the valley of the Tsēe-ārk-āmisht, and consequently down the east side of the valley at the head of the Sound, while I had come up partly by Squāwmisht valley, and partly by a lateral valley between the two rivers. Judging from his information, his way was quite as good, if not better, than mine. He describes the whole ascent as gradual, with the exception of 300 or 400 feet at the commencement; and even this, he says, is not very steep. I kept along the left bank of this river about 6 miles, when we came to a small cañon; and about 2 miles beyond this we again crossed the river on the dead wood, and camped. This cañon could easily be avoided by bridging the river a short distance below it—an operation by no means difficult, as the bank on the right side is low and level.

A 5-mile walk next day brought us to a lake which extends about 10 miles in a north-easterly direction, averaging 1 mile in width. I have called it

Green Lake, the Indians having no name for it, from the colour of its water. We kept the west bank of this lake to its head, which we reached shortly after noon, and then crossing a small swamp came to a level trail through a wood, and continued in it till night. During the night there was a heavy thunder-storm, which appeared to travel from north-east to south-west, but it did not perceptibly affect my barometer.

Our course the whole of the next day lay nearly due north (magnetic) up the centre of a thickly-timbered valley. At 9, on ascending a small hill, we saw the Lilloet River coming in from the westward between very high precipitous mountains, and beyond these appeared the snow-capped peaks which, the Indians say, surround the lakes from which run the Lilloet, Squāwmisht, Clāhōose, Bridge,* and several other rivers. They describe it as a basin, very high up, containing 4 or 5 small lakes, in which rise all the larger rivers watering this part of the country. Descending the hill above mentioned we came upon the Lilloet River, and followed its left bank till night, when we crossed one arm of it, over a fall of 200 or 300 feet, and camped. We passed over one or two high steep shoulders, towards the end of the day, by which no animal could go; but this was only from the height of the river and the density of the wood on its bank, making us of two evils choose the least. Indians almost always prefer keeping half-way up a mountain to going along the centre of a valley, so that travelling with them you seldom pass over the exact ground that a road would be made on; and, except as to crossing high mountains or rivers, their description of a route would not convey to a road-cutter a very good idea of the work before him.

An hour's walking next day brought us to a hill-top from which we looked down on the Lilloet meadows; a small lake, dry I suppose in winter, lay at our feet, and stretching miles east and west, dotted with several log-huts and covered with long grass, were the meadows. We got a canoe on the small lake or pond mentioned above, and, crossing it, paddled down a stream running from it and joining the main stream of the Lilloet about 2 miles below, on the left bank of which latter we disembarked. From this we walked 4 or 5 miles across the meadows, till we came to the river again and got a canoe, in which we reached Port Pemberton at noon, having been exactly 5 days from the Squāwmisht village. In crossing the Lilloet meadows I met several men at work building huts, sawing, turning hay, &c., &c.; they all spoke well of the soil, and the crops of different kinds that I saw appeared fine.

On the whole the country from the Squāwmisht to Port Pemberton would not be a very difficult one through which to make a road, and if it led to the Frazer above Kayoush instead of at Pemberton, or if so much of the first portage of the Harrison Lilloet route were not already finished, I should most strongly recommend this way being made available. As it is, however, it becomes a question for the Colonial Government whether the distance saved and the difficulties obviated would compensate for the outlay required. The lower portage on the Harrison Lilloet is already two-thirds done, and that is the only portage which would be saved by coming from Howe Sound. All those above Port Pemberton would still be required, unless there is some shorter route from Port Pemberton to the Fraser as yet unexplored; but the roads above Port Pemberton are required equally, whether the lower part comes from Port Douglas or Howe Sound.

About 10,000*l.* has already been expended on the Harrison Lilloet. To open a mule-trail by Howe Sound would cost about 15,000*l.*, a waggon-road 25,000*l.* With the present amount of traffic the two roads are hardly, I should think, required; and it is hardly problematical if, in the present

* The Indian name for the Bridge River is Hoÿstīēn.

financial state of the colony, it would be advisable entirely to throw away the sum expended on the Harrison Lilloet route for the probable advantages of any road which does not lead higher than Pemberton.

I may here speak of another route to the Upper Fraser, about which my present guides have given me some information, and which I believe his Excellency the Governor has long considered as likely to answer the requirements of the colony in this respect, I mean from Clāhōose, Desolation Sound. The Indians tell me they know the way, and that it is very good, and may be travelled at any season, as the Squāwmisht, Lilloet, &c., &c., are so small where this route crosses them that they are easily forded at all times. They say the country there is clear, but this I do not believe, as at the same time they say it would take two months to go from the inlet to the Fraser. Of course one cannot tell where they would meet the Fraser; but supposing it to be south of Chilcoat, as I think it must be, the distance in a straight line is only 120 miles, and if they doubled this distance by winding about they would only go 4 miles a day; if this be the case the country cannot be very clear. The time taken, however, to get through the bush, before it is cut, affords no criterion of the value of a route. The most difficult bush in this country to penetrate is a mixture of willow, alder, maple, and raspberry, which is very common; but this is the easiest to clear, as there are no large trees to cut down or stumps to root up. I am inclined to think there is some truth in their information, from the way they gave their account: they volunteered it, and, after expatiating some time on its goodness, they seemed to fear lest it should detract from the value of their own inlet, and began repeating the assurance that the Lā-ā-kīne route was very good two months hence, when the snow is hard. What they say of the rivers also seems likely to be true, as, from all we can learn, a north-east line from Desolation must pass near the sources of the rivers which water this part of the country, and I believe this account agrees with the information received by the officers of the Hudson Bay Company.

Of course, should it be your wish, I shall be perfectly ready to endeavour again to ascend the Lā-ā-kīne valley later in the year, though I confess I should start with the conviction that my exploration would be valueless to the colony. From Desolation I think it possible there may be a route, and I have no doubt there are one or two farther north, but I feel sure there is none from Jervis Inlet.

Of the geology, Dr. Wood says—"On the right side of the upper arm of Jervis Inlet the mountains against whose sides the sea washes give indications of being composed of porphyritic granite, the granitic rocks generally being deeply imbued with copper oxides; thin veins of white quartz are frequently seen intersecting the granite. The rocks forming the sides of the second inlet, some 6 or 8 miles distant, are more rugged and precipitous, and consist generally of a strongly micaceous quartzose granite. A mountain-stream, which we crossed on the 9th, presented in the granite and trap boulders, which formed its bed, singularly rich specimens of iron pyrites, without any observable indication of other metals. Upon another mountainous stream which we crossed I saw the largest boulder of quartz (transported) I ever witnessed; it must have been 4 or 5 tons weight, and was deeply stained on one side by the oxides of iron." Between Squāwmisht and Lilloet the geological features underwent no change—granite and trap everywhere and a few thin ledges of quartz;—no limestone of any kind. Dr. Wood also observes that "he saw no new specimens of vegetation, which is generally that which prevails along the coast and upon the banks of the Fraser River." Berries, which are such an important article of food with all the Indians, were not at all plentiful between Jervis and Howe Sounds, but nearer Lilloet they became very abundant, and many, especially the raspberry, very fine.

The same absence of animal life was observable on this journey as I remarked on my excursion last year. Here, where man hardly ever comes, one would think game would abound, but we only saw one deer, half-a-dozen grouse, and as many small birds. We saw the marks of several bears, and sufficient indications of deer to show us that the solitary one we had seen was not the only one in British Columbia. Of course, in this absence of vitality I do not include mosquitos, which swarm about in myriads, and torment one night and day as mosquitos only know how.

I need not speak of Dr. Wood, except to thank him for his kind assistance while he was with me. I have given his observations on the country passed over; he regrets that he had not opportunities of making any but what are superficial and imperfect.

I am preparing a sketch of my route. I have to regret that the succession of wet cloudy days and nights, and often the density of the bush, prevented the verification of the estimated distances by astronomical observations as frequently as I should have wished.

Since writing the above remarks on the route from Clăhōose, I have been enabled to obtain more information concerning it from my Indians, through an interpreter provided by his Excellency the Governor, and I find that it does not answer our expectations. Instead of going direct to the Fraser, as I understood them, it comes out on Lake Anderson; the country over which it passes is not good as they said, and it takes them nearly a month to perform the journey. This, I fear, makes this route quite useless, and these Indians do not know the country farther north. They describe the Clăhōose River as very large "like the Fraser," and that there is good land on its banks. Their description of these rivers confirms me in the opinion that the Clăhōose, Lilloet, Squāwmisht, Hoystien, and one or two other rivers, rise in the same place in the mountains, where there are several small lakes, as mentioned in paragraph 27.

I have made no remarks on the probable depth of snow in the winter on the Howe Sound route, but I do not think it likely there is much more than on the Lilloet, both having nearly the same latitude, though the elevation of the Howe Sound route is the greater. The Indians say that it is not at all deep, that it snows hard during one month (November), remaining on the ground three months, but their accounts on such subjects are always very vague. I understand that at times there are from 2 to 3 feet of snow at Port Lilloet.

XXII.—*Boat Excursion from Bangkok, in Siam, to the Pechaburri, on the Western Shore of the Gulf of Siam.* By Sir ROBERT H. SCHOMBURGK, Corr. F.R.G.S.

Read, June 11, 1860.

I HAD been suffering from indisposition for some time, and the doctor having advised a change of air and scene, I resolved to visit the town of Pechaburri,* on the western shore of the Gulf of Siam.

I left, therefore, the wharf of the Consulate on the 2nd of May last, at about four o'clock in the afternoon, in the Kala-

* Lat. $13^{\circ} 36'$ N., long. $99^{\circ} 55\frac{1}{2}'$ E. of Greenwich, according to Captain Richards' Survey of the Gulf of Siam.